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JC13 Rec'd PCT/PTO 08 NOV 2001

Practitioner's Docket No.: 791_170

PATENT

IN THE UNITED STATES DESIGNATED OFFICE (DO/US)

PCT/JP01/01135
INTERNATIONAL APPLICATION NO.

16 February 2001
INTERNATIONAL FILING DATE

28 March 2000
PRIORITY DATE CLAIMED

TITLE OF INVENTION

LITHIUM SECONDARY BATTERY

APPLICANT(S) FOR DO/US

Li YANG, Toshihiro YOSHIDA, Hiroshi NEMOTO and Michio TAKAHASHI

"EXPRESS MAIL" mailing label number EL872580068US.

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 addressed to the Box PCT, Attention: DO/US, Assistant Commissioner for Patents, Washington D.C. 20231 on November 8, 2001

Elizabeth A. VanAntwerp
Elizabeth A. VanAntwerp

Box PCT
Assistant Commissioner for Patents
Washington, D.C. 20231

Attention: DO/US

PRELIMINARY AMENDMENT

Sir:

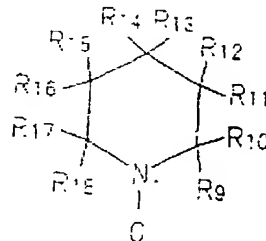
Prior to examination, Applicants wish to amend the subject application as follows:

In the Claims:

Please rewrite claims 12, 25 and 26 as follows:

12. (Amended) A lithium secondary battery according to claim 1, wherein said cyclic compound containing a N-O radical in a molecular structure is a compound having a molecular structure shown by the following general formula (II);

General formula (II):



(R₉ - R₁₈: a hydrogen radical, a hydrocarbon radical, or a cyano radical).

25. (Amended) A lithium secondary battery according to claim 1, wherein a capacity of the battery is 2Ah or more.

26. (Amended) A lithium secondary battery according to claim 1, wherein the battery is for being mounted on a vehicle.

In the Abstract:

Please rewrite the abstract as follows:

ABSTRACT

A lithium secondary battery includes positive and negative electrodes with an interposed separator and a nonaqueous electrolyte solution containing a lithium compound. At least one of these components contains at least one of: (a) an organic and/or inorganic inhibitor, (b) a compound having an organic base and an inorganic acid which are unitarily combined in a molecule, (c) a cyclic compound containing a N-O radical in a molecular structure, (d) a cyclic compound which becomes a Mn^{2+} supplier in the nonaqueous electrolyte solution, (e) a compound containing an atom showing Lewis acidity and an atom showing Lewis basicity in one molecule, (f) a three-dimensional siloxane compound, and (g) a nonionic surfactant; or the nonaqueous electrolyte solution contains: (h) a water-extracting agent, or (i) a hydrofluoric acid-extracting agent.

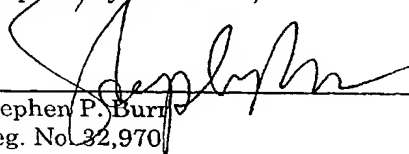
REMARKS

Claims 1-28 are pending herein. Applicants have amended the claims (claims 12, 25 and 26) to eliminate multiple dependent claims. Attached hereto as pages 4 - 6 is a marked-up version of the claims (claims 12, 25 and 26) and abstract showing the changes thereto. No new matter has been added. Applicants believe the case is now in condition for examination.

If the Examiner believes that contact with applicants' attorney would be advantageous toward the disposition of this case, he is herein requested to call applicants' attorney at the phone number noted below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,



Stephen P. Burr
Reg. No. 32,970

8 November 2001

Date

SPB/eav

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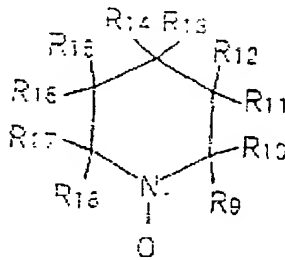
VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Claims 12, 25 and 26 have been amended as follows:

12. (Amended) A lithium secondary battery according to claim 1-~~or 2~~, wherein said cyclic compound containing a N-O radical in a molecular structure is a compound having a molecular structure shown by the following general formula (II);

General formula (II):



(R₉ - R₁₈: a hydrogen radical, a hydrocarbon radical, or a cyano radical).

25. (Amended) A lithium secondary battery according to ~~any one of claims~~claim 1-~~24~~, wherein a capacity of the battery is 2Ah or more.

26. (Amended) A lithium secondary battery according to ~~any one of claims~~claim 1-25, wherein the battery is for being mounted on a vehicle.

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Abstract:

The abstract has been amended as follows:

ABSTRACT

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A lithium secondary battery includes: ~~an electrode body~~ having ~~a positive electrode, a negative electrode, and a separator,~~ the positive and negative electrodes ~~and the negative electrode~~ being ~~wound or laminated by means of the~~ with an interposed separator; and a nonaqueous electrolyte solution containing a lithium compound ~~as a electrolyte~~. At least one of ~~the positive electrode, the negative electrode, the separator, the nonaqueous electrolyte solution~~ these components contains at least one of: (a) an organic and/or inorganic inhibitor, ~~which functions as a Cu corrosion inhibitor or a Cu trapping agent,~~ (b) a compound having an organic base and an inorganic acid which are unitarily combined in a molecule, (c) a cyclic compound containing a N-O radical in a molecular structure, (d) a cyclic compound which becomes a Mn^{2+} supplier in the nonaqueous electrolyte solution, (e) a compound containing an atom showing Lewis acidity and an atom showing Lewis basicity in one molecule, (f) a three-dimensional siloxane compound, and (g) a nonionic surfactant; or the nonaqueous electrolyte solution contains: (h) a water-extracting agent, or (i) a hydrofluoric acid-extracting agent.

VERSION WITH MARKINGS TO SHOW CHANGES MADE

~~This lithium secondary battery exhibits an excellent effect that
self-discharge property, cycle characteristics, long period
stability and reliability can be planned.~~

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